

17-4 H900 1.00

Work Order ID 80363

80363

Page 1

February-17-12 12:56:32 PM

ASAP

Item ID: D3691-1

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: STUD

Start Date: 17/02/2012 Start Qty: 12.00

12

Cust Item ID:

Required Date: 24/02/2012 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/02/13

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3691	Rev D								
100	BAND SAW	0.00				12			
100									
Bandsaw	Memo	0.00							
Jeaspa Bandsaw	***DO NOT USE CHOP SAW***								
	Cut blank 7.750" long								
110	DOOSAN LATHE	0.00				12			
110									
Doosan	Memo	0.00							
Doosan Lathe	1-Turn as per Folio FA716 Rev: <u>4A</u> & Dwg D3691 Rev: <u>D</u> 2-Deburr								
	per dwg D3691								
	3-Check .625" bore with DT9530 GO/NO GO Gauge								
160	QC2- Inspect parts off machine FAI/FAIB	0.00				12			
160									
QC	Memo	0.00							
Quality Control									

SA 12/3/18

SA 12/3/17

SA 12/3/19

F102

Dart Aerospace Ltd

W/O: 80363		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3691-1 PAR #: Fault Category: Machining NCR: Yes No DQA: Date: 12/04/04
 12-1309 Resolution: Scrap Disposition: Scrap QA: N/C Closed: Date: 12/4/4

NCR:		WORK ORDER NON-CONFORMANCE (NCR) 128.51						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/3/18	110	- 1 part too short, 7.625 dim is 7.591. 0.019 under tolerance - Bardees glippy not sturdy enough. (bends)	CP 12.03.20 PS 1042	SCRAP.	12/3/18	S 12/3/18	CP 12.03.20 PS 1042	8 12/3/18
			CP 12/04/04 PS 1042				CP 12/04/04 PS 1042	

NOTE: Date & initial all entries

Work Order ID 80363***80363***

Page 2

February-17-12 12:56:32 PM

Item ID: D3691-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: STUD

Start Date: 17/02/2012 Start Qty: 12.00

12

Cust Item ID:

Required Date: 24/02/2012 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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170

QC8- Inspect parts - second check

0.00

170*and 12/03/22*

QC

Memo

0.00

12 10

Quality Control

100% CHECK,CHECK ALL DIMENSIONS AND THREAD FIT

171

0.00

171

Purchasing

Memo

0.00

CX 12/03/26 (12)

Purchasing

Liquid Penetrant Inspection as per QSI 038
Issue P/O: *16555*
LPI as per dwg D3691
Attach copy of NDT results to work order

173

Receive & Inspect for Damage & Mat'l Certs

0.00

173

Packaging

Memo

0.00

12/03/26 (12)

Packaging

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 80363

80363

Page 3

February-17-12 12:56:32 PM

Item ID: D3691-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: STUD
 Start Date: 17/02/2012 Start Qty: 12.00 *12* Cust Item ID:
 Required Date: 24/02/2012 Req'd Qty: 12.00 *12* Customer:
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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175	QC5- Inspect part completeness to step on W/O	0.00							
175									
QC	Memo	0.00							
Quality Control									

180	Identify as per dwg & Stock Location: <u>ST GA</u>	0.00							
180									
Packaging	Memo	0.00							
Packaging									

190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.00							
Quality Control									

Handwritten notes and stamps:

- Circle around *12* and SQ 2-03-30
- 12/4/2
- 012-03-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 1

February-17-12 12:56:35 PM

Work Order ID: 80363

80363

Parent Item: D3691-1

D3691-1

Parent Item Name: STUD

Start Date: 17/02/2012

Required Date: 24/02/2012

Start Qty: 12.00

Required Qty: 12.00

Comments:

IPP Rev:A New Issue 08-01-29 JLM Verified By:EC
 IPP Rev:B Material Change 09-01-07 JLM Verified By:EC IPP
 REV:C AS PER REV D 10-03-16 JLM VERIFIED BY:EC
 IPP Rev:C Added note on Step 2 09-01-26 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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M174PH-H900R1.000

Purchased

No

f

21.2000

8.764382

M174PH-H900R1 000

**

12/3/12

17-4SS H900 ROUND BAR 1.00

Location

Loc Qty

Loc Code

MAT030

21.2

117445

21.2

1174462

8.624

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	80363
Description: Stud		Part Number:	D3691-1
Inspection Dwg: D3691	Rev: D	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	0.700	/		SA-9	U ₂
45°	0.5°	45°	/			
0.625	+0.004/-0.000	0.627	/			
1.25	+0.000/-0.03	1.225	/			
118°	0.5°	118°	/			
R0.03	+/-0.030	R.032	/		R.G.	
0.11 Ref	+/-0.030	.11	/			
90°	0.5°	90°	/			
Ø0.189	+0.005/-0.001	Ø.191	/			
1.31	+/-0.030	1.31	/			
1.65	+/-0.030	1.65	/			
0.750	+0.000/-0.010	0.750	/			
Ø0.659	+0.000/-0.015	Ø.648	/		SA-5	M ₂
7.625	+/-0.015	7.625	/			
2.90	+/-0.030	2.915	/			
3/4-16UNF-2A	N/A		/			
0.075 x 45°	+/-0.010 x 0.5°	0.075 x 45°	/			
0.375	+0.000/-0.010	0.375	/			
Ø0.189	+0.005/-0.001	Ø.191	/			
R0.25	+/-0.030	R.25	/		R.G.	
R0.50	+/-0.030	R.50	/		R.G.	

Measured by:	SA	Audited by:	SA	Prototype Approval:	N/A
Date:	12/3/18	Date:	12/03/22	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	
B	09.11.04	Dwg Rev updated	KJ	
C	10.03.31	Dimensions revised per Dwg Rev D	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

5

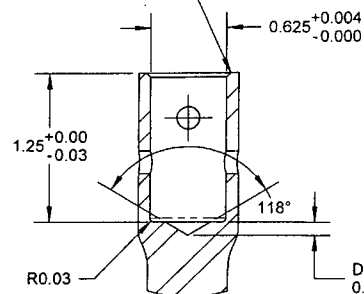
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3

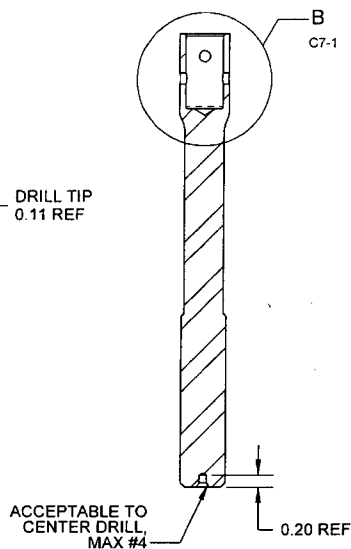
2

1

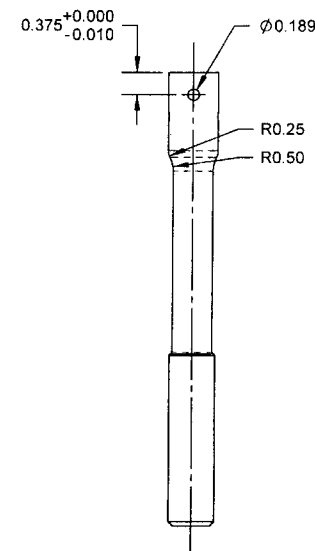
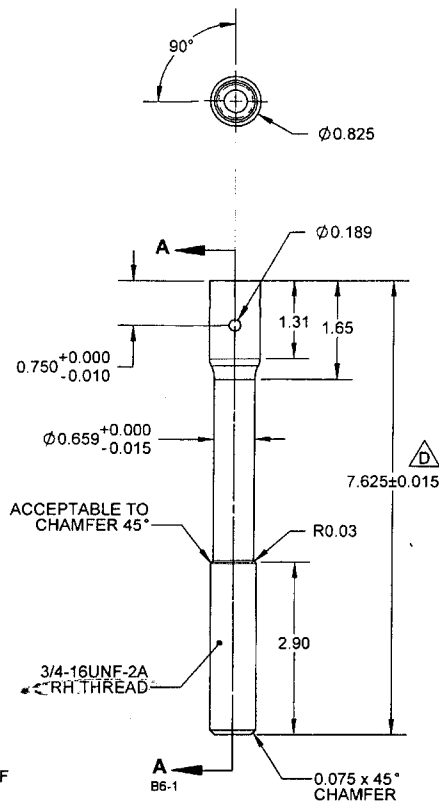
45° CHAMFER TO
THIS DIAMETER



DETAIL B
SCALE 2X
C6-1



SECTION A-A
D4-1



RELEASED
2010-03-15
MB

D3691-1 STUD

SHOP COPY

FOR IDENTIFICATION

FOR IDENTIFICATION

UNCONTROLLED

SUBJECT TO A REVISION

WITHOUT NOTICE

WORK ORDER

NO. - 80363 MJS
12/02/17

NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.81 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

D	7.625 WAS 7.750 (ZN C4-1)	RF	10.03.03
C	0.20 WAS 0.16 & CENTER DRILL #4 WAS CENTER DRILL #2 (ZNB6-1); UPDATE NOTE 8 TO REF QSI (ZN A8-1)	RF	09.09.09
B	CHANGE TO 17-4PH H-900 (ZN A8-1); Ø0.695 WAS Ø0.665 (ZN D8-1); REFORMATTED TO CURRENT DWG	RF	08.11.24
A	NEW ISSUE	RF	08.03.12
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. D
MFG. APPR.	RF	D3691	SHEET 1 OF 1
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	STUD	NTS
DATE	10.03.03	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMPILED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

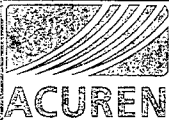
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 12179

CLIENT	DART Aerospace	DATE	03/23/2012	PAGE	1	OF	1
ATTENTION	LINDA LACELLE	ACUREN JOB NO.	188-12-00072	TIME	AM	<input checked="" type="checkbox"/>	PM <input type="checkbox"/>
ADDRESS	1270 ABELDEEN HAWKEYE RD ON	PO/NO No.		WORK LOCATION	SAME		
PROJECT	F.P.I. on MACHINED PARTS	ACCEPTANCE STD	ASTM 1417/031-038	REV./DATE	2005		
ITEM(S) EXAMINED	30 STUDS						

JOB DESCRIPTION	PROCEDURE NO. LT-002	REV./DATE	2008	TECHNIQUE NO. LT-1242	REV./DATE	2008
PART NO.	SEE RESULTS	MATERIAL	STAINLESS STEEL	THICKNESS	VARIOUS	
SCOPE	A WET FLUORESCENT LIQUID PENETRANT INSPECTION WAS CARRIED OUT ON THE 100% EXTERNAL SURFACE.					

TEST DETAILS	
METHOD	<input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE
FAMILY BRAND	MAGNAFLUX
PENETRANT	2607 MINIMUM DWELL TIME 45 MIN.
PENETRANT REMOVER	H2O MINIMUM DRY TIME >10 MIN.
DEVELOPER	SDS2 MINIMUM DWELL TIME 10 MIN.
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY
WATER WASH <input checked="" type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED	
BLACK LIGHT S/N 16459 <input type="checkbox"/> OUTPUT > 1000 μ W/CM ² <input type="checkbox"/> AMBIENT < 2 fc	
LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE	
OTHER LABINO	
LIGHT METER S/N 1098866 CAL DUE DATE JUL 2012	

TEST SURFACE	
SURFACE CONDITION	<input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input checked="" type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE	<input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/ 50°F <input checked="" type="checkbox"/> 10°C/ 50°F TO 52°C/ 125°F <input type="checkbox"/> > 52°C/ 125°F

RESULTS- (<input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL)
10.0. #
4 - 79308 - STUDS ✓
17 - 80363 - STUDS ✓
6 - 79093 - STUDS. ✓
5 - 79300 - STUDS. ✓
8/26/03/29

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE	Andrew Sheldon	DTR #	E-63476
TECHNICIAN (SIGNATURE):	U.KE Johnston	REPORT REVIEWED BY:	
NAME (PRINT):	U.KE Johnston	NAME	INITIALS
CGSB LEVEL	1 st TECHNICIAN	CGSB LEVEL	2 nd TECHNICIAN
CGSB REG. No	66606	CGSB REG. No	

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY